



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re-application of MONTEIL et al.

Group art Unit : 1625

Serial N° : 09/986,629

Examiner : REYES, Hector M.

Filed : 11/09/2001

For : "PROCESS FOR SYNTHESIZING N-(MERCAPTOACYL)AMINO  
ACID DERIVATIVES FROM ALPHA-SUBSTITUTED ACRYLIC ACIDS".

**DECLARATION UNDER RULE 132**

Hon. Commissioner of Patents and Trademarks  
WASHINGTON D.C. 20231

Sir :

I, Denis DANVY

residing at 6A, rue Haëmers  
76190 Yvetot

(France) ;

Declare and say :

I am citizen of France.

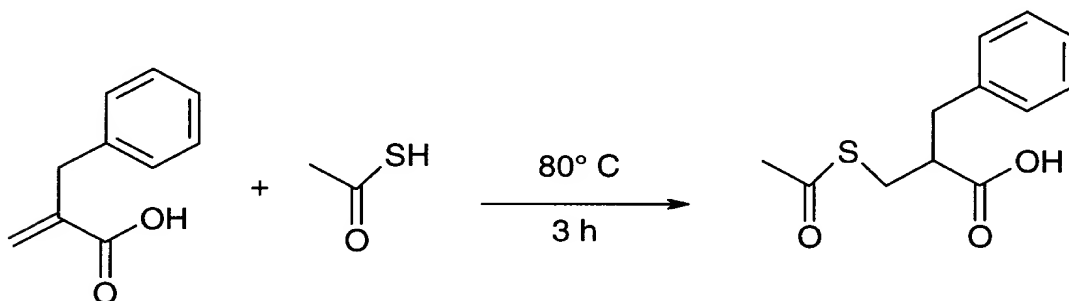
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As regards the pending objections raised against the above-identified  
application, I wish to underline and submit the following elements;

It is commonly known in the art of Michael addition of thiol (such as thioacetic acid used in the examples of the application) onto unsaturated compounds that a Michael addition of thiols onto unsaturated acids generally leads to yields which are quiet higher than in the case of the addition of thiols onto esters.

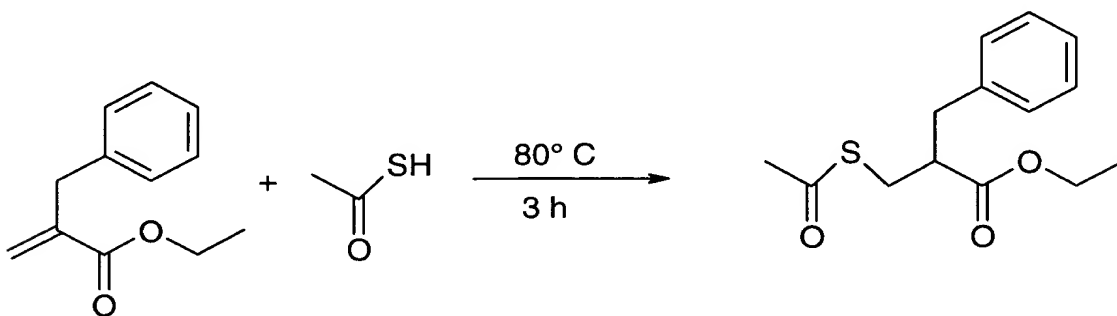
As an illustration, the two following Michael additions have been implemented in the conditions of Example 1(B) of the application, with different reactants :

(1) addition of thioacetic acid (1,2 equivalent) onto **benzacrylic acid** :



benzacrylic acid    thioacetic acid

(2) addition of thioacetic acid (1,2 equivalent) onto **ethyl benzacrylate** (**benzacrylic ester**)



ethyl benzacrylate    thioacetic acid

In each of cases (1) and (2), after 3 hours of reaction at 80° C, the excess of thioacetic acid has been removed by using a rotary evaporator and then <sup>1</sup>H NMR analysis has been performed so as to analyze the product of the reaction. In case (1), the conversion as determined by NMR is almost total (NMR shows that less than 4% of benzacrylic acid is unreacted). On the other hand, for case (2), the conversion of benzacrylic ester is only of 50%.

Moreover, the purity of the product is better in case (1) than in case (2) : only one spot is observed by thin-layer chromatography in case (1), whereas a plurality of spots are observed in case (2), evidencing the presence of sub-products.

The undersigned Declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true ; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this                      day of November 25<sup>th</sup> 2003

*D. Danvy.*